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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/603,252

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Thomas J. Heller JR.

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EXAMINER

DILLER, JESSE DAVID

ART UNIT

PAPER NUMBER

2187

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/603,252

Applicant(s)

HELLER, THOMAS J.

Examiner

Jesse Diller

Art Unit

2187

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 January 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 1/7/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☒ Other: Cited NPL.

DETAILED ACTION

1. Claims 1-30 are pending in the application, of which claims 1 and 28 are independent, and have been examined.

Information Disclosure Statement

2. The information disclosure statement (IDS) submitted on 01/07/2004 has not been considered, because it does not conform to the requirements of 37 CFR § 1.98. See MPEP § 609.01(B)(1)(b). It appears that this IDS is not for this application.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include any of the reference sign(s) mentioned in the description. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

4. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the subject matter of,

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for example, claims 9, 15-18, 27 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

5. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

7. The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that

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the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

8. The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

9. The abstract of the disclosure is therefore objected to as being of excessive length.

10. The disclosure is also objected to because of the following informalities:

- Page 1, lines 10-13; page 12, lines 3-30, etc. the allusions to the 'related application should be explicated. This application appears to be application #10/603,251.
- Page 1, line 18: "set forth in these" should be "set forth in this" for clarity.
- Page 2, line 32: allusions to the TPC-C benchmark are indefinite, because there are multiple versions of this standard. Which version is intended?
- Page 13, lines 28: "bits, were used to make the determination" should be "bits, was used to make the determination".

Appropriate correction is required.

Claim Objections

Claims 1-27, 31 objected to because of the following informalities:

- Claim 1, lines 5-6 recites, "processing nodes **controlling movement of software initiated movement** of software processes". This appears to be an error. It is assumed the claim is meant to read, "processing nodes **controlling software-initiated movement** of software processes". Dependent claims 2-27 are objected on the same grounds as inheriting the limitations of parent claim 1.
- There are two claims numbered as '**Claim 27**' on page 22. The second, 12-line "Claim 27" on page 22 has been taken to be claim 31. For Examination purposes, this claim will be referred to hereafter as **claim 31**. NOTE that, as there are 31 claims in this application and the Application Transmittal cites only 30 claims, this may require further action on Applicant's part pursuant to 37 CFR § 1.16(i).

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

11. **Claims 1-30 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

12. **Claims 1 and 28 recites** that the cache controller logic in said processing nodes allows movement of software processes between said plurality of cache coherency regions without requiring a selective purging of cache contents in the nodes. However, the specification, in page 14, lines 10-20 and page 15, lines 5-15, expressly teaches that when software processes are moved to different processing nodes, cached data is 'left behind.' Subsequent requests for that data from software processes now running on the new set of processing nodes will require a purging of the 'left behind' data in the old caches (page 15, lines 10-15). This appears to directly contradict the specification.

13. **Claim 2 recites** the limitation ""the current coherency region mode" in lines 6-7. There is insufficient antecedent basis for this limitation in the claim. For examination purposes, the claim is assumed to read, "a current coherency region mode".

14. **Claim 2 recites**, in lines 8-10, "any cache in said processing nodes that contains a processor that initiated said incoming storage request." This is unclear. Does the 'any cache' initiate the request? Or does 'a processor' initiate the request?

15. **Claims 2 and 30 further recite** that the supervisor software ensures that "no copy of the requested storage address exists outside that processor's current coherency region." However, page 14, lines 10-20 specifically recite that during the 'software-initiated movement of software processes' of claim 1, copies of data for storage addresses in the coherency region are 'left behind.' It is unclear how this agrees with the claim language.

16. **Claims 2-27 and 29-30 are rejected for the same reasons as their parent claims 1, 28, as inheriting the limitations of their parent claims.**

Double Patenting

17. Claim 1 of this application conflicts with claim 12 of Application No. 10/603,251.

37 CFR 1.78(b) provides that when two or more applications filed by the same applicant contain conflicting claims, elimination of such claims from all but one application may be required in the absence of good and sufficient reason for their retention during pendency in more than one application. Applicant is required to either cancel the conflicting claims from all but one application or maintain a clear line of demarcation between the applications. See MPEP § 822.

A rejection based on double patenting of the "same invention" type finds its support in the language of 35 U.S.C. 101 which states that "whoever invents or discovers any new and useful process ... may obtain a patent therefor ..." (Emphasis added). Thus, the term "same invention," in this context, means an invention drawn to identical subject matter. See *Miller v. Eagle Mfg. Co.*, 151 U.S. 186 (1894); *In re Ockert*, 245 F.2d 467, 114 USPQ 330 (CCPA 1957); and *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970).

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

18. **Claim 1 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 12 of U.S. Patent Application No. 10/603,251, published as US 2004/0268044 A1.** Although the conflicting claims are not identical, they are not patentably distinct from each other because, while the '251 application recites that the movement of processes is done without "moving physical storage contents" and the instant application recites that the movement of processes is done without "selective purging of the cache contents", it should be clear to one of ordinary skill in the art that a purging of cache contents, which amounts to a write-back of data to main memory, is a moving of the physical storage contents.
19. **Also note** that claims 19-21 and 23-24 correspond to claims 1-3 and 5-6, respectively, of the '251 application.
20. This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

21. **Claim 1 is rejected under 35 USC § 102(b) as being anticipated by Jim Handy, "The Cache Memory Book," hereinafter Handy.**

22. Handy teaches:

- A multiprocessor computer system, comprising: a plurality of processing nodes and a plurality of dynamic cache coherency regions using caches associated with said processing nodes (Fig. 4.10),
- and having cache controller logic in said processing nodes (This limitation is inherent. A cache requires controller logic to function.) controlling movement of software processes between said plurality of cache coherency regions (a computer cache stores data and instructions for software processes) without requiring a selective purging of cache contents in one or more of said processing nodes (see Table 4.2. For Read Miss commands, when the process data is in another coherency region, i.e., another processor's cache, in the Exclusive Unmodified state, the controllers control the movement of the process data from one cache region to another without eviction or writeback. In fact, the Futurebus+ system specifically is designed so as not to require a main memory to which data is to be written back. See Page 160, second full paragraph. Also note the transitions for a Read Shared Hit request received from the System Bus. When the current coherency region receives the request and data is exclusive to that region, the process data is moved between the coherency regions and the status is set to Shared, which does not require a purge or writeback).

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Conclusion

23. Claims 2-18, 22, 25-30 distinguish over the prior art of record.

24. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. **Cypher et al., US 7,032,078**, teaches a multiprocessor system and coherency method in which a hardware supervisor uses processor states and a mode table to determine which caches should handle or look at each request.

25. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jesse Diller whose telephone number is (571) 272-4173. The examiner can normally be reached on 9:30AM-6:00PM.

26. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on (571) 272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

27. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JD


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